

# Sydney dynamics group workshop



THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

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**Theme 2**

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## Margaret River Western Australia

A project of interest: Early prediction of infrequent failures from multivariate temporal data Ayham Zaitouny and Débora Corrêa (UWA) failure prediction  
In the industry, failure of key equipment is of significant impact and could cause an effective delay in the production. Although predicting these failures in early stages is of great importance, mathematically this problem has particular challenges: the data is unbalanced for these infrequent events, that is, much less data on failures, the data is multivariate with limited information about what causes the failure, not knowing when the failure pattern starts, and not knowing what is the timespan of the failure pattern. In this project, we propose a combination of various mathematical and statistical techniques to tackle this problem in different steps.